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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/562,463

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David Elata

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EXAMINER

BAYOU, AMENE SETEGNE

ART UNIT

PAPER NUMBER

3746

NOTIFICATION DATE

DELIVERY MODE

06/06/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@pczlaw.com  
Arch-USPTO@pczlaw.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/562,463	<b>Applicant(s)</b> ELATA ET AL.	
	<b>Examiner</b> AMENE BAYOU	<b>Art Unit</b> 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,5-12 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5-12 and 16-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/27/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Objections*

1. Claims 1, 5-12, 16-20 are objected to because of the following informalities: In re claims 1 and 11, line 6 recites “circular symmetry” which should have been written as “circular symmetry of the sheet”. Claim 7 and claim 16, lines 2-3 recite “deformable sheet” which should have been written as “deformable circular sheet”, line. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 5-12 and 16-20 are rejected under 35 U.S.C 102(b) as being anticipated by Drevet (6361284).

In re claim 1, Drevet discloses a pumping apparatus including:

A device for inducing motion on fluids or solids (**figure 1**), the device comprising: a **circular structure** with a **deformable circular sheet (33)** compressed to form a continuous structural wave that is symmetric about an axis of circular symmetry of the sheet (it is clearly shown in figure 3 that circular diaphragm 33 is oscillating in symmetrical fashion about a an axis of circular

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symmetry of the sheet which is an axis that bisects the sheet in to two symmetrical circular halves); and **an actuator (column 5,lines 1-5)** for actuating the **deformable circular sheet (33)** and driving the structural wave in a predetermined manner and in a direction about the axis of circular symmetry of the sheet.

In re claim 5, Drevet discloses a pumping apparatus including:

**A first wall (31; figure 3)** is provided against the **deformable circular sheet (33)** so as to define a first conduit between the **first wall (31)** and the **deformable sheet (33)**.

In re claim 6, Drevet discloses a pumping apparatus including:

The **first conduit (6)** is provided with an **inlet (27)** and an **outlet (29)**.

In re claim 7, Drevet discloses a pumping apparatus including:

**A second wall (32; figure 3)** positioned opposite the **first wall (31)**, with the **deformable sheet (33)** between the walls, the **second wall (32)** defining a second conduit between the **second wall (32)** and the **deformable sheet (33)**.

In re claim 8, Drevet discloses a pumping apparatus including:

The second conduit is provided with **an inlet (inlet 27 is common for both the first and second conduits) and an outlet (outlet 29 is common to both first and second conduits)**.

In re claim 9, Drevet discloses a pumping apparatus including:

The actuator **(the excitation motor; column 5, lines 1-5)** is selected from the group consisting of electrostatic actuators, piezoelectric actuators, thermo elastic actuators and magnetic actuators (the excitation motor implicitly comprises magnets. Also in column 6, lines 1-3 the variety of the excitation motor is indicated as being magnetically driven).

In re claim 10 Drevet in column 4, lines 64-67 discloses that at least a part of the device is made from silicon.

In regards to the claims 11-12 and 16-20, Drevet discloses a method of inducing motion on fluids since under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claims, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. In re King, 801 F.2d 1324,231 MPEP 2112.02”.

4. Claims 1, 5-9, 11-12 and 16-20 are rejected under 35 U.S.C 102(b) as being anticipated by Perlov et al (4498850).

In re claim 1, Perlov et al disclose a pumping apparatus including:

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A device ,**in figure 1**,for inducing motion on fluids or solids, the device comprising: a circular structure with a **deformable circular sheet (8;figure 1,2 and column 4,lines 35-39)** compressed to form a continuous structural wave that is symmetric about an axis of circular symmetry of the sheet (**figures 3A-3C ,6, 27and 31 all show symmetric waves that result in symmetrical deformation of the membrane and subsequent symmetrical wave propagation about an axis that bisects the membrane in to similar circular halves**) ; and an actuator (**electromagnet belts 19-31;column 6,lines 13-21**) for actuating the **deformable circular sheet (8)** and driving the structural wave in a predetermined manner and in a direction about the axis of circular symmetry(the sheet axis can be an axis passing through the center of the sheet both in axial and vertical direction).

In re claim 5, Perlov et al disclose a pumping apparatus including:

A first wall is provided against the deformable sheet so as to define **a first conduit (6)** between the first wall and the **deformable sheet (8), figure 4.**

In re claim 6, Perlov et al disclose a pumping apparatus including:

The **first conduit (6)** is provided with an **inlet (44)** and an **outlet (50), figure 4.**

In re claim 7, Perlov et al disclose a pumping apparatus including:

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A second wall positioned opposite the first wall, with the **deformable sheet (8)** between the walls, the second wall defining a second conduit (**also called as 6; figure 1**) between the second wall and the **deformable sheet (8), figure 1**.

In re claim 8, Perlov et al disclose a pumping apparatus including:

The second conduit (**also called as 6; figure 1**) is provided with **an inlet (46) and an outlet (48), in figure 4**.

In re claim 9, Perlov et al disclose a pumping apparatus including:

The actuator (**electromagnet belts 19-31; column 6, lines 13-21**) is selected from the group consisting of electrostatic actuators, piezoelectric actuators, thermo elastic actuators and magnetic actuators.

In regards to the claims **11-12, 16-20**, Perlov et al disclose a method of inducing motion on fluids since under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claims, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. In re King, 801 F.2d 1324,231 MPEP 2112.02”.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perlov et al (4498850) as applied to claim 1 in view of Drevet (6659740).

In re claim 10 Perlov et al as applied to claim 1 disclose the claimed invention except the specific material the device is made from.

Drevet teach a similar vibrating fluid circulator with at least **a part (21)** of the device is made from silicon.

It would have been obvious to one skilled in the art at the time the invention was made to modify the pump of Perlov et al by making the diaphragm from silicone as taught by Drevet in order to accurately manufacture the device by photolithographic technique and also to use it in micro-fluidic pumping applications.

***Response to Arguments***

7. Applicant's arguments with respect to claims 1, 5-12 and 16-20 have been considered but are not persuasive.

In re claims 1, 5-12 and 16-20 applicant amended independent claims 1 and 11 by including the limitation that the structural wave is "symmetric about an axis of circular symmetry of the sheet" and categorically argued that Perlov et al fail to teach or disclose the claim limitation as amended without providing any evidence

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how prior art of record fails to teach the amended features. Nevertheless, in the rejection of claims above examiner has clearly discussed how Perlov et al still disclose the amended claim limitation, namely a structural wave being “symmetric about an axis of circular symmetry of the sheet “. Examiner also made new rejection based on newly cited art that anticipates all of applicant’s amended claims.

### ***Conclusion***

8. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37CFR 1.136(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amene S. Bayou whose telephone number is 571-270-3214. The examiner can normally be reached on Monday-Thursday, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information

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for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/  
Supervisory Patent Examiner, Art  
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/Amene S Bayou/

Examiner, Art Unit 3746